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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 18

Application Number: 09/717,147
Filing Date: November 21, 2000
Appellant(s): ROY ET AL.

David P. Gordon
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 01/28/2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1, 2, 13, and 24 (group I); 2 and 14 (group II); 3 and 15 (group III); 4 and 16 (group IV); 5 and 17 (group V); and 11 and 23 (group VI) do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,412,651	GORSHE	5-1995
5,689,506	CHIUSSI et al	11-1997
6,148,349	CHOW et al	11-2000
6,359,891	BERGANTINO et al	3-2002

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-2, 12-14, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorshe (5,412,651).

Regarding claims 1 and 13, Gorshe discloses a method comprising generating a repeat data frame having a plurality of rows (see col. 1, lines 44-46); making requests for space (see col. 3, lines 29-37; col. 6, lines 62-68; and Figure 5); and granting the requests through an out-of-band link (see lines 531-533 of Figure 5). Gorshe does not specifically disclose the request is made during row N for space in row N+1. However, it would has been obvious that the request be made during row N for space in row N+1 because space could be provided in any row subsequent to row N and no unexpected result is produced by providing space in row N+1.

Regarding claims 2 and 14, Gorshe further discloses each request includes through-the switch routing information and priority level information (see col. 3, lines 61-63).

Regarding claim 12 and 24, Gorshe further discloses the requests are made out-of-band (see lines 531-533 of Figure 5).

Claims 3-4 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorshe (5,412,651) in view of Chiussi et al (5,689,506).

Regarding claims 3-4 and 15-16, Gorshe discloses all the claimed subject matter as described in previous paragraph except for explicitly disclose that the switch is a multistage switch and buffering the request at each stage of the switch. However, multistage switch and buffering the request at each stage of the switch is well known in the art. Chiussi discloses a system using multistage switch and buffering the request at each stage of the switch (see

abstract; Figure 11; and col. 3, lines 13-26). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the multistage switch and buffering the request at each stage of the switch as taught by Chiussi in the system of Gorshe so that more switching can be performed by the switch.

Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorshe (5,412,651) in view of Bergantino et al (6,359,891).

Regarding claims 5 and 17, Gorshe discloses all the claimed subject matter as described in previous paragraph except for a 52-byte chunk. However, Bergantino discloses a 52-byte chunk (see col. 15, lines 27-28). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the technique as taught by Bergantino in the system of Gorshe in order to meet specific needs.

Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorshe (5,412,651) in view of Chow et al (6,148,349).

Regarding claims 11 and 23, Gorshe discloses all the claimed subject matter as described in previous paragraph except for the requests are made in-band. However, Chow discloses the use of in-band and out-of-band links for transmission of messages (see col. 26, lines 26-27). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use in-band for the requests as taught by Chow in the system of Gorshe since the use of in-band or out-of-band is a matter of design choice.

(11) Response to Argument

Regarding claims 1, 12, 13, and 24, the applicant argued that the most important element of claims 1 and 13 is the requesting during row N for space during row N+1 and that in Gorshe

system, any one user will make a request for space during a row N of the frame. However, the request is not a request for space in row N+l. Requests are granted on the expiration of a counter which is set by a number of factors including the amount of traffic preceding the requesting user. Thus, it is unknown, both at the time the request is made and the time that the request is granted, where a requester will be granted space in response to a request. This argument is not persuasive because in Gorshe system, the request is made during row N for space in any row subsequent to row N that includes row N+1. Therefore, Gorshe implicitly discloses making requests during row N for space in row N+1. In Gorshe system, the granting of space in row N+1 or any row subsequent to row N+1 is depending on the total number of pending packets in the system and the number of packets ahead of the user's own queued transmission. Claim 1 claims making requests during row N for space in row N+1; however, the claim does not disclose whether the request will be rejected if the space is available, for example, in row N+2 instead of in row N+1. Therefore, it seems like the claimed invention is requesting for the best space available in rows subsequent to row N. The applicant also argued that it is not possible to provide space in row N+1 following a request in row N and that is why it is not shown or suggested in the prior art. Thus, contrary to the Examiner's assertion space could not be provided in any row subsequent to row N. This argument is not persuasive because the ability to provide space in row N+1 following a request in row N is depending on a number of factors including the length of the row, the delay within the switch, the transmission speed, and the distance between the requester and the granter within the switch, none of those factors are mentioned in claims 1 and 13.

Regarding claim 2 and 14, the applicant argued that the sentence: "In one embodiment, the assigned time slots for packet requests are each associated with a queue with an assigned

priority." in col. 3, lines 61-63 of Gorshe seems to suggest that requests made during certain time slots are assigned a certain priority. It does not seem to suggest that the requests include priority level information as claimed in claims 2 and 14. Nevertheless, even if this sentence were to suggest that requests include priority level information, it certainly does not suggest that the requests include through-the-switch routing information. This argument is not persuasive because Gorshe does teach priority level information (see packet priority level in col. 7, line 64 and priority field in col. 9, line 3). Gorshe also discloses routing information (see address field in col. 8, lines 53-59). Note that without routing information, the request will not be able to routed to its destination port.

Regarding claims 3 and 15, the applicant argued that these claims specify that each request is buffered at each stage of the switch and low priority requests are discarded when the buffer reaches a threshold and that the examiner seems to have ignored the claim limitation of discarding low priority requests and has confused data with requests. This argument is not persuasive because buffering transmission packets at each stage of a multi-stage switch and discarding low priority packet are both well known. Chiussi discloses cell loss priority where low priority cell will be discarded (see col. 6, line 22). Note that the different between a data packet and a request packet is that the data packet is transmitted in a traffic channel and the request packet is transmitted in a control/signaling channel. Both data packet and request packet can include packet type and priority information fields. The applicant also argued that Chiussi discloses buffering cells but does not discloses buffering requests and certainly does not discloses discarding low priority buffered requests when a buffer reaches a threshold. This argument is not persuasive because in a multi-stage switch, both data packet and request packet

will be stored in a buffer at each stage of the switch before being forwarding to its output port. As discussed above, both data packet and request packet can include cell loss priority field so that low priority will be discarded when a buffer reaches a threshold.

Regarding claims 4 and 16, the applicant argued that claims 4 and 16 provide that requests are granted by returning the requests which have not been discarded before reaching the egress of the switch. The Examiner has finally rejected these claims on the same grounds as the rejection of claims 3 and 15. Thus, the Examiner has completely ignored the limitations of these claims. This argument is not persuasive because claims 4 and 16 merely claim that returning requests which have not been discarded before reaching the egress of the switch. In other words, only requests that reach the egress of the switch will be considered for granting the request. The returning/granting the request is already discussed in claim 1. In addition, it is obvious that a non-received/discarded request will never be granted.

Regarding claims 5 and 17, the applicant argued that Bergantino discloses an ATM cell processing system wherein the HEC byte is checked and discarded before storing the cell. Thus, the stored cell occupies 52 bytes of storage space. However, there is no indication in Bergantino that any row of a data frame may have a size in excess of 52 bytes and that all requests be made for 52 byte chunks. Moreover, the stated incentive to combine is "imaginative". This argument is not persuasive because Bergantino does disclose using a 52-byte of space within a switch. In addition, the requesting of 52-byte space is a matter of choice; any number of bytes can be requested.

Regarding claims 11 and 23, the applicant argued that these claims specify that the requests for bandwidth are made in-band. The Examiner's final rejection of these claims is based

on col. 26, lines 26-27 of Chow et al. which describes in-band messages and out-of-band messages. According to the Examiner, whether requests are made in-band or out-of-band is a matter of design choice. The Examiner's rejection is improper because the Chow et al. patent is not concerned with a telecommunications switch and is not concerned with arbitrating bandwidth in a communications switch. Moreover, there is no incentive to combine the Chow et al. reference with Gorshe, and the Examiner has not set forth any such incentive. This argument is not persuasive because in-band and out-of-band signaling are well known. Chow discloses these well-known features. In-band and out-of-band signaling can be used in any system including in a switch, in a local area network (LAN), or in a wide area network (WAN) and can be independent of bandwidth arbitration.

(12) Conclusion

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Brian Nguyen
March 18, 2004

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